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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,979	07/03/2003	Marcus Franz	02198/000M991-US0	4345
7278	7590	04/09/2007	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			HANDAL, KAITTY V	
			ART UNIT	PAPER NUMBER
			1764	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/613,979

Applicant(s)

FRANZ ET AL.

Examiner

Kaity Handal

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-21, 24, 28 and 35-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/28/2006.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 19-21, 24, 28 and 35-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bentley et al. (US 2002/0000066 A1) in view of Durst et al. (US 5,522,723).

With respect to claim 19, Bentley teaches as apparatus to produce hydrogen by means of the oxidation of fuels that contain chemically bound hydrogen, comprising: a reactor (fig. 1, 10) that contains a first porous (as illustrated) material/inside second reforming zone (20) and a second porous (as illustrated) material/inside third zone (22), and the reactor (10) comprises a tubular reactor (illustrated) that has a central chamber/first zone (18) for introducing a fuel (via tube (48)) and an oxidation agent/air (via tube (50)) through inlet (38), said central chamber/first zone (18) extending in an axial direction (illustrated), wherein the reactor (10) is defined in the radially outward direction by a first wall/mesh (30) that contains the first porous material/inside second reforming zone (20), and the first wall/mesh (30) is delimited radially to the outside by a second wall/mesh (32) that contains the second porous material/inside third zone (22)).

Bentley is silent to any details pertaining the characteristics of the partial oxidation/combustion/flame occurring within his apparatus, and therefore, there is no mention as to the pore size of both the first (20) and second (22) porous materials (as illustrated in figure 1) described above. Durst, similar to Bentley, teaches oxidizing/burning fuel with air in a chamber (Figure 1) comprising zones (A & B & C). Durst further teaches wherein zones (A & B & C) have different porosity (col. 8, lines 49-55) wherein the first porous material has a pore size smaller than that of the second porous material (col. 2, lines 21-30) in order to provide a combustion chamber having a flame that burns steadily at low temperature and with low pollutant emission (col. 2, lines 17-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the pore size of the first porous material smaller than that of the second porous material in Bentley's apparatus, as taught by Durst, in order to provide a flame that burns steadily at low temperature and with low pollutant emission within.

With respect to claims 20-21, Durst further teaches wherein the first porous material (zone A) has a pore size that has a Péclet number that is less than a critical Péclet number below which flame propagation cannot occur (col. 8, lines 49-57).

With respect to claim 24, Bentley teaches wherein said apparatus (fig. 1, 10) is delimited by an outer wall/reactor housing (12) that extends axially at a given distance from the second wall/mesh (32) (illustrated).

With respect to claim 28, Bentley teaches wherein the first porous material (20) and the second porous material (22) of at least one of the first wall/mesh (30) and the second wall/mesh (32) comprises a catalytically active structure (page 4, paragraph [0024]).

With respect to claim 35, Durst further teaches, wherein a position for flame development is defined by the surface or area between the first porous material and the second porous material (col. 8, lines 59-64).

With respect to claim 36, claim describes operational conditions and does not limit the invented apparatus. While features of an apparatus may be recited either structurally or functionally, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)., see also *In re Swinehad*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does." *Hewlett-packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). MPEP 2114

With respect to claim 37, Bentley teaches wherein the first porous material (20) and the second porous material (22) are located adjacent to one another (as illustrated).

With respect to claim 38, Bentley teaches wherein the first porous material (20) and the second porous material (22) are disposed concentrically about the central longitudinal axis of the tubular reactor (10) (as illustrated).

With respect to claim 39, Bentley teaches wherein the first porous material (20) contains a fixed bed of ceramic refractory materials (page 4, paragraph [0042]).

With respect to claim 40, Bentley is silent as to the shape of said refractory materials, however, it would have been obvious to one having ordinary skill in the art to choose a shape from a group consisting of ceramic packing bodies in the form of rings, balls, open-celled foams, or also in the form of other regular ceramic structures. Change in size and shape is not patently distinct over the prior art absent persuasive evidence that the particular configuration of the claimed invention is significant. See *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). MPEP 2144.04 IV A.(size) MPEP 2144.04 IV B (Shape).

With respect to claim 41-42, Bentley teaches wherein at least one of the first porous material (20) and the second porous material (22) contains a structured metal/screen (28).

With respect to claim 43, Durst further teaches wherein combustion occurs within the second porous material (col. 8, lines 59-64).

Response to Arguments

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Applicant's arguments with respect to claim 19-21, 24, 28, and 35-43 have been considered but are moot in view of the new ground(s) of rejection as necessitated by amendment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KH

3/19/2007



GLENN A. CALDAROLA
PRIMARY EXAMINER
~~GROUP 1100~~

TC1700